



# 1N4728A THRU 1N4764A

## 1W EPITAXIAL ZENER DIODE

### FEATURES

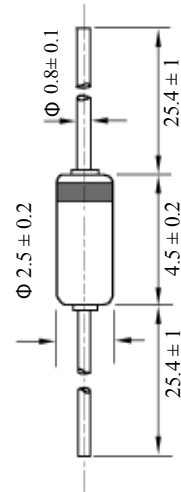
- Low profile package
- Built-in strain relief
- Low inductance
- High temperature soldering : 260°C /10 seconds at terminals
- Glass package has Underwriters Laboratory Flammability Classification
- In compliance with EU RoHS 2002/95/EC directives

### MECHANICAL DATA

- Case: Molded Glass DO-41G
- Terminals: Axial leads, solderable per MIL-STD-750, Method 2026 guaranteed
- Polarity: Color band denotes positive end
- Mounting position: Any
- Weight: 0.012 ounce, 0.336 gram



#### DO-41(GLASS)



All Dimensions in mm

### ABSOLUTE MAXIMUM RATINGS(LIMITING VALUES)(TA=25°C)

|                                                                                    | Symbols          | Value           | Units |
|------------------------------------------------------------------------------------|------------------|-----------------|-------|
| Zener current see table "Characteristics"                                          |                  |                 |       |
| Power dissipation at TA=50°C                                                       | P <sub>tot</sub> | 1 <sup>1)</sup> | W     |
| Junction temperature                                                               | T <sub>J</sub>   | 175             | °C    |
| Storage temperature range                                                          | T <sub>STG</sub> | -65 to +175     | °C    |
| 1) Valid provided that a distance of 8mm from case are kept at ambient temperature |                  |                 |       |

### ELECTRCAL CHARACTERISTICS(TA=25°C)

|                                                                                    | Symbols          | Min | Typ | Max               | Units |
|------------------------------------------------------------------------------------|------------------|-----|-----|-------------------|-------|
| Thermal resistance junction to ambient                                             | R <sub>thA</sub> |     |     | 170 <sup>1)</sup> | °C/W  |
| Forward voltage at IF=200mA                                                        | V <sub>F</sub>   |     |     | 1.2               | V     |
| 1) Valid provided that a distance at 8mm from case are kept at ambient temperature |                  |     |     |                   |       |



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### Electrical Characteristics @T<sub>A</sub>=25°C unless otherwise specified

| Type Number<br>(Note 1) | Nominal Zener Voltage (Note 2)   | Test Current    | Maximum Zener Impedance (Note 3)  |                                   |                 | Leakage Current |                  | Max Surge Current<br>8.3ms |
|-------------------------|----------------------------------|-----------------|-----------------------------------|-----------------------------------|-----------------|-----------------|------------------|----------------------------|
|                         | V <sub>Z</sub> @ I <sub>ZT</sub> | I <sub>ZT</sub> | Z <sub>ZT</sub> @ I <sub>ZT</sub> | Z <sub>ZK</sub> @ I <sub>ZK</sub> | I <sub>ZK</sub> | I <sub>R</sub>  | @ V <sub>R</sub> | I <sub>ZS</sub>            |
|                         | (V)                              | (mA)            | (Ω)                               | (Ω)                               | (mA)            | (μA)            | (V)              | (mA)                       |
| 1N4728A                 | 3.3                              | 76              | 10                                | 400                               | 1.0             | 100             | 1.0              | 1380                       |
| 1N4729A                 | 3.6                              | 69              | 10                                | 400                               | 1.0             | 100             | 1.0              | 1260                       |
| 1N4730A                 | 3.9                              | 64              | 9.0                               | 400                               | 1.0             | 50              | 1.0              | 1190                       |
| 1N4731A                 | 4.3                              | 58              | 9.0                               | 400                               | 1.0             | 10              | 1.0              | 1070                       |
| 1N4732A                 | 4.7                              | 53              | 8.0                               | 500                               | 1.0             | 10              | 1.0              | 970                        |
| 1N4733A                 | 5.1                              | 49              | 7.0                               | 550                               | 1.0             | 10              | 1.0              | 890                        |
| 1N4734A                 | 5.6                              | 45              | 5.0                               | 600                               | 1.0             | 10              | 2.0              | 810                        |
| 1N4735A                 | 6.2                              | 41              | 2.0                               | 700                               | 1.0             | 10              | 3.0              | 730                        |
| 1N4736A                 | 6.8                              | 37              | 3.5                               | 700                               | 1.0             | 5.0             | 4.0              | 660                        |
| 1N4737A                 | 7.5                              | 34              | 4.0                               | 700                               | 0.5             | 5.0             | 5.0              | 605                        |
| 1N4738A                 | 8.2                              | 31              | 4.5                               | 700                               | 0.5             | 5.0             | 6.0              | 550                        |
| 1N4739A                 | 9.1                              | 28              | 5.0                               | 700                               | 0.5             | 0.5             | 7.0              | 500                        |
| 1N4740A                 | 10                               | 25              | 7.0                               | 700                               | 0.25            | 0.5             | 7.6              | 454                        |
| 1N4741A                 | 11                               | 23              | 8.0                               | 700                               | 0.25            | 0.1             | 8.4              | 414                        |
| 1N4742A                 | 12                               | 21              | 9.0                               | 700                               | 0.25            | 0.1             | 9.1              | 380                        |
| 1N4743A                 | 13                               | 19              | 10                                | 700                               | 0.25            | 0.1             | 9.9              | 344                        |
| 1N4744A                 | 15                               | 17              | 14                                | 700                               | 0.25            | 0.1             | 11.4             | 304                        |
| 1N4745A                 | 16                               | 15.5            | 16                                | 700                               | 0.25            | 0.1             | 12.2             | 285                        |
| 1N4746A                 | 18                               | 14              | 20                                | 750                               | 0.25            | 0.1             | 13.7             | 250                        |
| 1N4747A                 | 20                               | 12.5            | 22                                | 750                               | 0.25            | 0.1             | 15.2             | 225                        |
| 1N4748A                 | 22                               | 11.5            | 23                                | 750                               | 0.25            | 0.1             | 16.7             | 205                        |
| 1N4749A                 | 24                               | 10.5            | 25                                | 750                               | 0.25            | 0.1             | 18.2             | 190                        |
| 1N4750A                 | 27                               | 9.5             | 35                                | 750                               | 0.25            | 0.1             | 20.6             | 170                        |
| 1N4751A                 | 30                               | 8.5             | 40                                | 1000                              | 0.25            | 0.1             | 22.8             | 150                        |
| 1N4752A                 | 33                               | 7.5             | 45                                | 1000                              | 0.25            | 0.1             | 25.1             | 135                        |
| 1N4753A                 | 36                               | 7.0             | 50                                | 1000                              | 0.25            | 0.1             | 27.4             | 125                        |
| 1N4754A                 | 39                               | 6.5             | 60                                | 1000                              | 0.25            | 0.1             | 29.7             | 115                        |
| 1N4755A                 | 43                               | 6.0             | 70                                | 1500                              | 0.25            | 0.1             | 32.7             | 110                        |
| 1N4756A                 | 47                               | 5.5             | 80                                | 1500                              | 0.25            | 0.1             | 35.8             | 95                         |
| 1N4757A                 | 51                               | 5.0             | 95                                | 1500                              | 0.25            | 0.1             | 38.8             | 90                         |
| 1N4758A                 | 56                               | 4.5             | 110                               | 2000                              | 0.25            | 0.1             | 42.6             | 80                         |
| 1N4759A                 | 62                               | 4.0             | 125                               | 2000                              | 0.25            | 0.1             | 47.1             | 70                         |
| 1N4760A                 | 68                               | 3.7             | 150                               | 2000                              | 0.25            | 0.1             | 51.7             | 65                         |
| 1N4761A                 | 75                               | 3.3             | 175                               | 2000                              | 0.25            | 0.1             | 56.0             | 60                         |
| 1N4762A                 | 82                               | 3.0             | 200                               | 3000                              | 0.25            | 0.1             | 62.2             | 55                         |
| 1N4763A                 | 91                               | 2.8             | 250                               | 3000                              | 0.25            | 0.1             | 69.2             | 50                         |
| 1N4764A                 | 100                              | 2.5             | 350                               | 3000                              | 0.25            | 0.1             | 76.0             | 45                         |

Note: 1. Type numbers listed have standard tolerance on the nominal zener voltage of ±5%.

2. Measured under thermal equilibrium and DC (I<sub>ZT</sub>) test conditions.

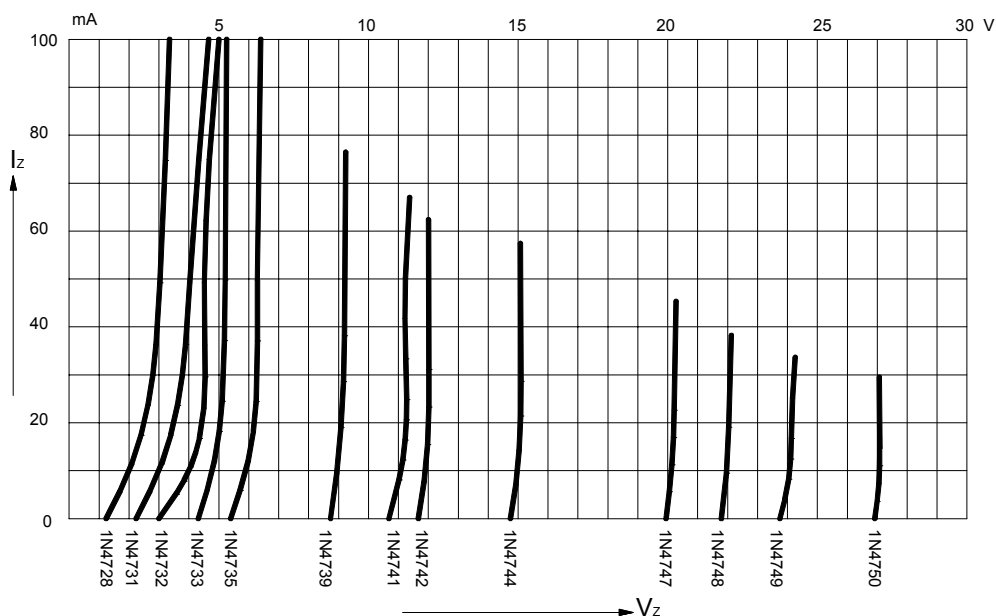
3. The Zener impedance is derived from the 60Hz AC voltage which results when an AC current having an RMS value equal to 10% of the Zener current (I<sub>ZT</sub> or I<sub>ZK</sub>) is superimposed on I<sub>ZT</sub> or I<sub>ZK</sub>. Zener impedance is measured at two points to insure a sharp knee on the breakdown curve and to eliminate unstable units.



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## RATINGS AND CHARACTERISTIC CURVES

**FIG.1 – BREAKDOWN CHARACTERISTICS**



**FIG.2 – ADMISSIBLE POWER DISSIPATION VERSUS AMBIENT TEMPERATURE**

